

# WiSE Working Paper

Series No.4 June 2016

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## Growth, Equality and Employment: Investing in Childcare in Scotland

### Abstract

The Scottish Government has made a commitment to double expenditure on childcare to 'increase the amount of free hours of childcare available to all 3-4 year olds and "vulnerable" 2 year olds from 15 to 30 hours per week (1,140 per year)' by 2021 (Davis et al. 2016). Existing studies focus mainly on the feasibility and the cost of that promise as well as incentives from the employment of parents. However, investment in the childcare sector also brings employment effects (especially for women) such as a direct effect (the number of people employed in the care sector); an indirect effect (increased demand of the care sector's suppliers) and an induced effect (increased household consumption as a result of higher employment). This paper explores how the proposed investment in the childcare sector can have positive direct, indirect and induced effects on employment, contributing to Scotland's economic growth. The analysis is primarily based on existing data for Scotland including the official input-output tables of the Scottish Government's Statistical Office.

## Introduction

Childcare debates are usually associated with demography, women's professional activity, gender equality or social justice (Orloff 2006, Esping-Andersen 2009, Szelewa 2011). It is argued from across different strands of social policy that the provision of high quality care services for the youngest children (age 0-3) in crèches and orientation towards educare of nursery schools can substantially contribute to enhanced:

- psychological and emotional development of young children (Clarke-Stewart 1989, Barnett 2005)
- equal opportunities for children from families at risk of social exclusion (Heckman 2006, Taggart et al. 2015)
- reduction of social risks for children in the future (Heckman 2011)
- investment in human capital of parents (Duvander and Andersson 2006)
- gender equality (Folbre 2008)
- and economic growth (Campbell et al. 2013, Ilkcaracan 2013, Henau De et al. 2016).

In the long term investment in public childcare institutions is beneficial for the whole economy. The desire to have children is often related to the parent's ability to participate in the labour market (Szelewa 2011), thus the availability of formal childcare influences demographic patterns. Collectivised forms of care provision are also more productive than individualised ones in the family and contribute to 'resolving the care deficit that arises because more women are in paid employment than ever before but men have not increased the amount of domestic work or caring they do sufficiently to make up the difference' (Henau De et al. 2016: 12). Therefore, 'investment in social infrastructure' is crucial. The expression 'investment in social infrastructure' is well-established by Susan Himmelweit who indicates that high quality childcare increases wealth and well-being of the society at present and in the future, thus it should be perceived as 'a form of capital rather than current spending' (2016: 84) in the National Accounts. Such investment impacts also upon women's remuneration (diminishing the loss resulting

from the years of employment breaks) and counteracts their impoverishment at present, and in the future, as pensioners.

Opposing arguments include the pressure on parents to return quickly to workforce, depreciation of parental care, additional stress for children in a group setting, as well as lack of choice between private child minders and group care in a nursery (Belsky 1986, Leach 2010). Additionally, such investment entails considerable fiscal costs.

Notwithstanding these concerns, institutional childcare can be seen as an investment in the country's current and future economy, boosting its GDP and reducing gender inequalities (Kim and Antonopoulos 2011, Ilkcaracan 2013, Henau De et al. 2016). Along with rising parents' employment opportunities the increase in childcare provision would generate additional employment in this sector and the vast majority would be taken by women, reducing the existing gender employment gap. Additionally, the UK Women's Budget Group and the Scottish Women's Budget Group emphasise that investment in the 'caring and sustainable economy', including the creation of new jobs, in part would pay for itself, because it would 'generate more revenue from income tax and national insurance and save money on social security' (Plan F 2015).

The issues presented above do not exhaust the subject of advantages (and disadvantages) for society and economy of having high quality, free of charge and commonly available formal childcare in the country (cf. Campbell et al. 2013, Himmelweit 2016, Gillespie and Khan 2016).

The aim of this paper is to focus particularly on the employment increase<sup>1</sup> in the childcare sector (direct effects) as a result of doubling the existing 15 hours of free formal childcare per week over the next years<sup>2</sup> and its estimated impact (indirect and induced effects) on the Scottish labour market as a whole, as well as the consequences of that for economic growth.

<sup>1</sup>The methodology and focus of this paper is inspired by a similar research "Investing in the Care Economy. A gender analysis of employment stimulus in seven OECD countries" (Henau De et al. 2016) I had a pleasure to co-author.

<sup>2</sup>The Common Weal Policy (CWP) think-tank refers consistently to 2020 as a year of delivering 30 hours of free childcare in its report (Davis et al. 2016). Yet, the Scottish National Party (SNP) in the election campaign indicated 2021 as a date of reaching that result (SNP 2016), thus 2021 would be used in this paper as a point of reference.

## Childcare and employment patterns in Scotland

Since 1998 the availability and affordability of childcare in Scotland has increased significantly (public spending for children, families and preschool education amounts to 2.34 per cent of GDP (Naumann 2013)), the number of places in nurseries has expanded<sup>3</sup>, and parents with lower incomes are now supported by Universal Credit. Despite these advances, Family and Childcare Trust and Children in Scotland show that parents in Scotland pay more than parents in the geographically close northern England for childcare services and that childcare supply is low, with just 13 per cent of local authorities able to meet the demand for services from working parents (Family and Childcare Trust 2016). These reasons might account for children's low attendance rates in early learning and childcare services (13.92 per cent of 0-1 year olds, 60.91 per cent of 2-3 year olds and 55.28 per cent<sup>4</sup> of 4-5 year olds only)<sup>5</sup>.

It is not surprising therefore, that the employment rate for mothers with children under the age of five remains ten percentage points lower (between 60 and 63 per cent) than the employment rate for women in general (Scottish Parliament 2014). One of the main reasons for women's economic inactivity is their care responsibilities for family members. In 2014/15 this was cited by 29.3 per cent of inactive women and only 8.2 per cent of inactive men (Campbell and Thomson 2016: 8). Even though women's employment is high (see Table 1), 42 per cent of women and 13 per cent of men were employed part-time (under 30 hours

per week) in 2015 (Campbell and Thomson 2016: 2), due to, among other reasons, balancing private and professional life. Taking the decision to move to part-time employment often means downgrading since the availability of high quality part-time work is very limited. This can lead to underemployment<sup>6</sup> in the long term. The Scottish statistics show that the number of underemployed workers in 2014 was estimated to be 216,500, i.e. 8.6 per cent of all aged 16 and over in employment. Women constituted 56.2 per cent of all underemployed, which is also reflected in the part-time employment figures presented in the Table 1 below.

Certainly the promised increase in childcare services up to 1,140 free hours per year for 3-4 year olds and vulnerable 2-year olds could have very positive effects on the employment opportunities parents, as well as employment in the childcare sector, and therefore could contribute to reducing the gender employment gap. In addition, there are wider social and economic effects including improved employability of parents, through improved professional skills and experience<sup>7</sup>, resulting in higher productivity of the Scottish economy as a whole. Additional tax revenues mentioned in 'Plan F' quoted above would be a further accelerator in the system still affected by the financial downturn in the past few years. However, in this paper the focus is on employment effects rather than the broader social and economic benefits, which could be a potential subject of research in the future.

*Table 1. Main labour market indicators*

	employment rate	unemployment rate	economic activity rate	part-time empl. rate	under-employment
<b>women</b>	71.6%	5.3%	75.6%	42%	9.9%
<b>men</b>	77.5%	7.2%	83.5%	13%	7.3%
<b>total</b>	74.5%	6.3%	79.5%	27%	8.6%

Sources: ONS 2016, Close the Gap 2015a, SPICe 2015.

<sup>3</sup>Although the United Kingdom is characterised as a 'liberal' welfare state (Esping-Andersen 1990, Ferragina and Seeleib-Kaiser 2011) that is relying on market services provision instead of public social and welfare provision, funding of childcare services is devolved to the four nations and Scotland stands out in this field against the others.

<sup>4</sup>This figure does not include children attending primary school.

<sup>5</sup>Number of children attending early learning and childcare services during the last full week before 30 November 2013 and registered to attend as at 31 December 2013, excluding child minding (Care Inspectorate 2014).

<sup>6</sup>Underemployed workers are defined as employed, who seek to increase their working hours in their current job or looking for an additional job or a replacement job that offers more working hours (SPICe 2015: 12).

<sup>7</sup>Other spill-over effects that this investment can bring are higher education attainment of young parents, parent's employability (changed attitudes of employers) and more free time to disposal of grandparents, since the use of their care in Scotland is widespread (Naumann et al. 2013).

## Methodology

The calculations of direct, indirect and induced employment effects are based on the input-output tables prepared by the Scottish Government (Croasdale et al. 2015). Direct effects result from increased employment in the childcare sector of childhood practitioners and managers necessary to meet the Scottish Government's promise. The same applies to the construction sector that is going to provide the infrastructure for the extended services. In this report the impact on that investment on GDP alone is shown<sup>8</sup>. The increased employment will induce further effects, down the supply chain, and more people would be employed, women and men, due to higher demand for their products and services. To calculate these indirect employment effects (called Type I), and their impact on GDP, multipliers were used for the industry group 'Residential care and social work', defined as 87,88 in the UK Standard Industrial Classification of Economic Activities (SIC) (Prosser 2009). The code 88 'Social work activities without accommodation' covers among others 'Child day-care activities' (code 88910) that include: child day-care activities (charitable), child day-care activities (non-charitable), crèche (charitable), crèche (non-charitable), day care for disabled children (charitable), day care for disabled children (non-charitable), day nursery (charitable), day nursery (non-charitable), playgroup (charitable) and playgroup (non-charitable) (HSE 2007). The same category is used for calculating induced employment effects (called Type II) and their impact on GDP. The induced effects can be characterised as an increased spending on final goods and services by households that results from the higher employment in the economy (from direct and indirect effects). The multipliers used (Type I and II)<sup>9</sup> take into account the total, added up effects. Therefore to section off the indirect effects, they were distinguished from direct effects, and in the case of the second type - both indirect and direct effects were subtracted (cf. Input-Output 2015). At first all three kinds: direct, indirect and induced effects are presented separately and later in a combined manner (total). Finally, all employment effects are gendered, according to the employment patterns in particular sectors in the United Kingdom (Henau De et al. 2016: 21-26).

## Employment effects of childcare investment

In order to fulfil the Scottish Government's commitment to double the allocation of 15 hours of free childcare a week by 2021, the Common Weal Policy (CWP) think-tank has calculated that an additional 45,000 places are required along with 10,970 extra staff (at the moment the number of full-time equivalent employees is 9,780 in the childcare sector) defined as the capacity challenge (Davis et al. 2016: 2). CWP has taken into account the total number of eligible children (145,000), assuming the annual rise of birth rates of 0.5 per cent by 2021 (latest birth rate equalled 10.7 per 1,000 population in 2011-2015, while in 2006-2010 was slightly higher and equalled 11.2 (NRS 2016)). Further, if the childcare staff to child ratio remains the same (1:5 for 2 year olds and 1:8 for 3 years and over), the think-tank estimates that the number of new practitioners needed as 9,845 plus, in addition, 1,125 new managers for the new childcare centres (Davis et al. 2016: 2).

The additional investment will take place gradually until the year 2021. However, it is difficult to predict the successive stages of its implementation and when exactly they would take place (since, among others, the new institutions have to be built and equipped in the upcoming years). Therefore, in this simulation the current situation is compared with the picture when the full 30 hours of free childcare are available. The calculations are based on the CWP estimates of the number of additional staff required. The figures presented in this paper include the employment effects, as well as the impact of that investment on GDP growth.

### Direct effects

The direct outcome of the Scottish Government investment in childcare services would be the creation of additional jobs in this sector. At the beginning of 2016 women's employment rate was 71.6 per cent and men's 77.5 per cent, thus the employment gap came to 5.9 percentage points (ONS 2016). Key statistics about women and men in Scotland show that 'in 2005 women made up 98% of pre-school education

<sup>8</sup>Due to difficulties with prediction of how many new workers will be employed in the construction sector during these upcoming years to build the necessary facilities, the impact of the financial investment on GDP growth, rather than on employment also, is calculated for the 'Construction' industry group. This group is defined 41-43 in SIC 2007, where the code 41 stands for 'Construction of buildings', 42 for 'Civil engineering' and 43 for 'Specialised construction activities' (Prosser 2009: 39).

<sup>9</sup>Please note Paul Grettton's (2013) 'the uses and abuses of input-output tables' publication, including the strong assumptions made by researchers in their results interpretation, which apply also to this analysis.

and childcare staff, and men made up 2%' (Scottish Government 2007)<sup>10</sup>. Although some time has passed since that study, it is assumed that the share of women in the sector remained at the same level, thus these figures are used for the gendered breakdown of the employment effects in the Table 2 below. Table 2 in case of the direct employment effects does not differentiate between childhood practitioners and managers of childcare facilities.

If the estimated 10,970 jobs are created<sup>11</sup> in the childcare sector by 2021, the direct effect will be an increase of women's employment by 0.62 percentage points in comparison with the current employment rates. Due to occupational segregation this number will not be that high for men (0.01 percentage points increase only). In total employment within the Scottish economy will expand by 0.32 percentage points.

## Indirect effects

In order to calculate the indirect employment effects input-output tables are used. The tables reflect the demand of the supply chain industries for goods and services necessary for their production that is finally consumed by households, government or is exported. The tables show how much output of a particular industry (care work in this case) is used as an input in the production processes of other industries. This analysis focuses on labour used in these processes and the input requirements per unit of other industries output<sup>12</sup>. For the calculations presented in Table 2 the Type I employment multiplier is used for the 87,88 SIC group, diminished by the direct effects. The gendered breakdown is based on the data available for the United Kingdom (Henau De et al. 2016: 23).

Women's employment rate in other industries will increase by 0.25 percentage points and men by 0.13 percentage points as a result of the increased employment in the childcare sector. The total indirect employment effects would be a rise of employment by 0.19 percentage points within the Scottish economy.

## Induced effects

Again, using the Scottish input-output tables the induced effects can be calculated. The employment multiplier (Type II) derives from the calculations of how much the demand of households would rise household demands as a consequence of increased household' incomes (resulting from the higher employment) and therefore how big the additional employment would be induced<sup>13</sup>. In these estimates households are perceived as a separate industry using inputs of other industries but producing outputs. The employment Type II multiplier includes direct, indirect and induced effects, thus for the calculations shown in Table 2 both direct and indirect effects were subtracted. Gendered employment patterns, as it was in the case of the indirect effects, can be found in the latest UK employment surveys (Henau De et al. 2016: 26).

The additional households' income would induce a generation of additional jobs, which would impact on women's and men's employment rates, raising them by 0.06 percentage points and 0.07 percentage points accordingly. The total induced employment effect would result in an additional 2,194 jobs and add 0.06 percentage points to the overall employment rate.

<sup>10</sup>The statistics used in this paper represent the official governmental data. Alternatively, Close the Gap suggests that in 2015 97 per cent of employees in childcare were women (Close the Gap 2015b).

<sup>11</sup>It is assumed that these jobs would be taken by unemployed. However, there are two other possibilities, not considered in this study due to the prognosis difficulty: underemployed will increase their working hours (therefore the rise in percentage points would not be that high) or newly employed persons will be interested in part-time jobs only (thus the rise would be higher than presented in tables). The same applies to indirect and induced employment effects calculations, but to GDP (in that case it is investment that matters not the employment patterns).

<sup>12</sup>It is presumed that these requirements would stay the same even when the demand for other industries output scales up.

<sup>13</sup>It can be expected that this employment would be even higher, as households would save a substantial amount of money by not paying for the extra 15 hours per week for the childcare.

## Total effects

By increasing the amount of free hours of childcare available, the Scottish Government would not only generate new jobs in the childcare sector, but this move would have a multiplied effect on job creation in other industries in the supply chain and jobs resulting from the increased household income. The total direct, indirect and induced effects, summed up, are presented in the Table 2.

Clearly the increased provision of free childcare would mostly benefit women, as they would be the ones directly employed in the childcare sector (98 per cent)

and in this sector's supply chain (67 per cent). More men would be employed as a result of the households' induced demand, but this does not really influence the final picture in terms of gendered total employment effects. The gendered aggregated total effects would have a very positive impact on women, raising their employment rate by almost 1 percentage point, while men would also benefit, although less so (employment growth of a little over 0.2 percentage points). That is why this particular policy would have an impact on closing the existing gender employment gap by 0.71 percentage points.

*Table 2. Gendered direct, indirect, induced and total employment effects*

	absolute employment	employment rates	employment share in the sector	jobs generated	new employment rates	rise in % points
<b>women direct</b>	1249,000	71.6%	98%	10,751	72.22%	0.62
<b>men direct</b>	1293,000	77.5%	2%	219	77.51%	0.01
<b>total direct</b>	2542,000	74.5%		10,970	74.81%	0.32
<b>women indirect</b>	1249,000	71.6%	67%	4,410	71.85%	0.25
<b>men indirect</b>	1293,000	77.5%	33%	2,172	77.63%	0.13
<b>total indirect</b>	2542,000	74.5%		6,582	74.68%	0.19
<b>women induced</b>	1249,000	71.6%	46%	1,009	71.66%	0.06
<b>men induced</b>	1293,000	77.5%	54%	1,185	77.57%	0.07
<b>total induced</b>	2542,000	74.5%		2,194	74.55%	0.06
<b>women total</b>	1249,000	71.6%		16,170	72.53%	0.93
<b>men total</b>	1293,000	77.5%		3,576	77.71%	0.21
<b>TOTAL</b>	2542,000	74.5%		19,746	75.06%	0.58



## Impact of childcare investment on economic growth

This part focuses on the influence of the predicted investment (both capital and current) on the growth of GDP in Scotland. The first line of Table 3 shows the growth resulting from doubling the expenses on childcare (Sturgeon 2015), that is the additional £439m invested annually, which is necessary for increased wages and the additional service maintenance from 2021<sup>14</sup>. However, the doubling of the existing free hours of childcare will incur higher costs in terms of physical infrastructure. Thus, the second line of Table 3 reflects an accumulated amount of £844m to be invested by 2021 - claimed by CWP researchers as necessary for building 1,125 high-quality childcare centres (Davis et al. 2016: 8).

The Gross Value Added (GVA) multipliers (Type I and Type II) from the input-output tables have been used for the GDP calculations, the 87,88 SIC group in the first case and 41-43 SIC group in the second one. As the results in Table 3 show, the total effects of both investments (care works and physical infrastructure)

would considerably contribute to GDP growth. The bigger the investment, the more visible stimulation affects the economy. If the investment in the physical infrastructure is distributed evenly between the four years (2017-2020), it will translate into c.a. 0.33 percentage point annual GDP rise at that time. In addition, the gradual investment on wages, the expanding childcare services and investment in the skills of future childcare practitioners and managers will contribute to GDP rise as well, but due to lack of precise annual investment plans, these contributions are not included in this paper. In uncertain times, when economies have just recovered from the latest financial downturn, such results are to be welcomed. In addition, as mentioned before, childcare provides additional effects like better education and well-being of future generations that has a value in itself, even if not expressed in the level of GDP growth, and this last measure should not be the only arbiter in making political decisions.

*Table 3. Effects of investment of the Scottish Government on GDP growth*

	<b>direct effects GDP contrib. millions £</b>	<b>indirect effects GDP contrib. millions £</b>	<b>induced effects GDP contrib. millions £</b>	<b>total effects GDP contrib. millions £</b>	<b>GDP rise in % pts</b>
<b>doubling existing investment (annual)</b>	439	257	175	871	0.67
<b>additional investment in physical infrastructure (by 2021)</b>	844	571	283	1,698	1.31

<sup>14</sup>Another figure – £441m – is present in some press releases, meaning an increase in budgetary spending up to £880m in 2021 (Stv News 2015).

## Conclusions

This paper presents the outcomes of the simulation of the employment effects resulting from an initial investment in doubling the provision of childcare by 2021. It demonstrates that such investment in social infrastructure will not only create jobs in the sector but also in its supply chain and sectors bound by household consumption. As shown, this investment will primarily benefit women, helping to close the gender employment gap. However, men will also gain jobs. In turn, expanded employment will boost Scottish GDP. Although the above results are substantial, they are not of the same magnitude as the one presented by the Scottish Government (Scottish Government 2014) that assumed a 2 percentage point increase in women's activity rate. The calculations presented above suggest that such an increase is unlikely with the assumed level of investment, unless jobs are created in other sectors of the economy for mothers willing to return to the job market. Also, in the future,

if the government invests in other social services, e.g. long-term care, due to the growing demand, this number may become more realistic (cf. Henau De et al. 2016).

The long term social and economic benefits of this social investment are dependent upon the quality of childcare being provided. This would entail having suitably qualified staff to provide care which requires higher salaries in order to both attract qualified staff in the first place and retain them. Therefore, the additional investment to expand free childcare provision needs to take that factor into account along with the investment in the construction of additional nurseries to provide new places. If these factors are taken into account, the impact on GDP could be even greater than the estimates presented in this paper and in turn could also make a more significant contribution to the government's tax revenue.



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ISBN: 9781905866793

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